

Guidelines for Tennis Court Construction

Reinforced Concrete Tennis Courts

- As with all concrete construction, a moisture/vapour barrier, consisting of polyolefin (15 mil. minimum thickness) should be installed prior to installation of any steel and/or cables. Overlap polyolefin sheets at least 6" and tape joints. Once in place no vehicular traffic should be allowed on the moisture/vapour barrier nor any other object which could puncture the barrier or otherwise compromise the integrity of the surface. All concrete should be pumped, not driven onto the court. Excessive loads at any time are unacceptable.
- At least a full half court should be placed in one continuous operation without intervening joints of any kind. The expansion joints allowed at the net line and between courts if there is more than one court. A non-extruded expansion joint filler material should be installed.
- There are the holes 25x25cm must be made in the concrete surface for the tennis posts installation.
- Immediately after finishing, the concrete should be kept continuously moist for 7 days by covering with polyethylene film, waterproof curing paper, sprinkling, ponding or other acceptable coverings. No curing compounds should be used. New concrete surfaces must cure for a minimum of 28 days. The residual moisture of floor slab should be below 1.8%
- The finished concrete surface should be polished by "helicopters". The finished concrete surface must be ideally smooth and without unevenness. The finished concrete surface of the court should not vary more than $\pm 3\text{mm}$ for 3m of straight edge when measured in any direction in any place.

H. Forms and Screeds

Forms and screeds should be set accurately and secured to prevent settlement or movement during placing of concrete. Forms should remain in place until the concrete has taken its final set.

I. Joints

A non-extruded expansion joint filler material 3/4" thick should be installed at the net line if the two halves of the court are cast separately, and between courts if there is more than one court. The bottom edge of the filler material should extend to or slightly below the bottom of the slab; the top edge should be held 7/8" below the surface of the slab by a tack strip of wood, its top flush with the finished slab surface. Edges of joints should be tooled with an edging tool having a radius of 1/4". After the concrete has cured, the tack strips should be removed and the joints sealed with an elastomeric sealing compound to within 1/8" of the surface. If the two halves of the court are cast separately, a concrete beam 6" thick and 18" wide should be cast in a trench across the center of the court. This beam is for support of the two slabs at the expansion joint under the net. The top of the beam should be at the elevation of the bottom of the court slab. The beam should be cast a day or two in advance of the court concrete. Bonding between the beam and the court concrete should be prevented by painting the top of the beam with an asphaltic or other bond preventing material. This beam is thickened to 12" at the net posts to provide additional stability for the posts.

CAUTION: All working joints may close and reopen.

J. Concrete Proportioning and Mixing

The concrete should have a compression strength of not less than 3,000 psi at the 28th day after casting. The minimum cement content for finish-ability should be not less than 470 lbs. per cubic yard for 1 1/2" maximum size coarse aggregate, 520 lbs. for 3/4", 590 lbs. for 1/2" and 610 lbs. for 3/8" maximum size coarse aggregate. In freeze/thaw environments, the minimum cement content should not be less than 560 lbs. per cubic yard. The slump should not be more than 4". Ready-mixed concrete should be mixed and delivered in accordance with ASTM C 94, Specification for Ready-Mixed Concrete.

K. Placing and Finishing

At least a full half court should be placed in one continuous operation without intervening joints of any kind. Uninterrupted concrete placing operations without intervening joints should be limited to one full court with continuous reinforcement. Concrete should be spread, consolidated, screeded, bull-floated and finished in accordance with Section 7.2 of ACI (American Concrete Institute) Standard 302, Recommended Practice for Concrete Floor and Slab Construction. When concrete is sufficiently set to withstand foot pressure with only about 1/4" indentation and the water sheen has left the surface, the slab should be uniformly finished by power floating and troweling. The finished concrete surface should be polished unless otherwise specified by the surface manufacturer.

L. Surface Tolerances

The finished surface of the court should not vary more than 1/8" in 10' when measured in any direction.

M. Curing

Immediately after finishing, the concrete should be kept continuously moist for 7 days by covering with polyethylene film, waterproof curing paper, sprinkling, ponding or other acceptable coverings. Curing time should be in accordance with surfacing system manufacturer's recommendations. No curing compounds should be used. New concrete surfaces must cure for a minimum of 28 days.